

Statement of Brian J. Smith
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to the
California Energy Commission's Integrated Energy Policy Report Committee

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Good morning commissioners Boyd and Keese. My name is Brian Smith, Deputy Director, Planning and Modal Programs, Department of Transportation.

I am pleased to provide you with some perspectives on California Department of Transportation's efforts focused on improving efficiency and productivity of the transportation system - a balanced, integrated system that promotes sustainability and mobility.

We commend the Commission for its leadership to make California more energy efficient. The Commission's staff is doing an excellent work in developing the Integrated Energy Policy Report. We fully support this effort and my staff is working closely with your staff in areas in which we can assist and to ensure a consistent framework to address energy and transportation issues.

20 years ago the California Energy Commission, in its fourth Biennial Report, observed:

"California's transportation system is the most vulnerable, least diverse, and most energy intensive of the state's energy consumption sectors...relies on oil for 97 percent of its energy needs, making it most directly and immediately affected by oil supply disruptions and price shocks...California's heavy reliance on the automobile developed as a result of urban and suburban growth patterns and inexpensive gasoline. Even though highways are more crowded and fuel prices continue to increase, there have been only modest increases in the use of bus, rail and other alternatives to the automobile...The important policy questions...are: What are reasonable strategies and methods to pursue in improving the efficiency and flexibility of the transportation sector? What barriers and problems stand in the way? What steps can California take to deal with these problems."

These questions are still relevant today, although I like to highlight why I think we are in a better position to constructively address them today than we were then.

The Challenge: Reducing Reliance on Imported Petroleum and Reducing Greenhouse Gas Emissions While Improving Mobility

Mobility is critical to our society. People need to move to work, to play, to shop, to go to school, to seek medical assistance, to interact with one another. Freight movement is critical to our economy, and with the logistics chain now acting as the warehouse for

many of our retail and manufacturing businesses, the predictable just-in-time delivery of parts and goods is no longer a nicety, but a necessity.

As a result the transportation system, the infrastructure and the moving parts, are woven into the fabric of our society. As Gloria Jeff, AICP, Director, Michigan DOT and former FHWA Deputy Administrator so eloquently described, “Transportation provides the skeleton upon which communities are built. Transportation is the essential element that makes a community more than just a grouping of residents, businesses, recreational facilities and places of worship linked by a set of values. It is the mortar that holds a community together. From a community’s economy and quality of life to its public services—all are rooted and grounded in the quality, quantity and focus of the transportation system and its link to land use.”

California faces serious transportation and energy challenges over the next several decades. As the State’s population and economy continue to grow, we must safely maintain our existing transportation system and provide for increasing demand for mobility. While the State’s growth and diversity adds to California’s socio-economic strength, it also confronts policy makers with multitude of social, economic, environmental, and transportation challenges.

- California population is projected to grow by 11 million in the next 20 years – this Represent an increase of approximately one-third over the current population of 35 million,
- The demographic or make up of the population is also changing. While general population is expected to increase by 30 percent, the senior population will increase by more than 70 percent and by 2020 Department of finance anticipates three million additional Californians under the age of 20.
- The demand for transportation, measured in vehicle miles traveled, is increasing at twice the rate of population growth.
- Personal travel behavior is changing. The number of non-work trips has overtaken the number of commuting trips. This has led to increased use of road network for unpredictable non-work trips, thus increasing congestion during off peak periods

California’s status as the world’s 5th largest economy is connected to our ability to transport not only people but also goods within the state as well as to and from other states and counties. Over 37% of the value of U.S. and foreign trade passes through California’s ports—that trade largely moves on California rail and highway systems. More than 2 million jobs nationwide are tied to moving those goods. Approximately 75% of freight movement uses trucking as the principle mode of transportation.

We must maintain personal and goods mobility while striving to enhance our environment, support our communities, and maintain our quality of life. This will require cooperation, collaboration, and commitment. We will need to share a common vision and endorse common goals and strategies.

California's transportation future and its energy future are linked. While it appears functionally invisible, energy is central to transportation because it basically keeps it running. Transportation energy has a peculiar nature – it's a good guy, bad guy of transportation. On one hand it fuels the transportation system and with it generates most of the revenues we need for transportation improvements and enhancements such as capacity improvement, transit, rail, and alternative choices and improving communities' quality of life. On the other hand this petroleum dependent system is a major source of environmental and health problems, and susceptibility to disruption. It is expensive from environmental, financial and security standpoints.

In 2002, California drivers used an estimated 17.6 billion gallons of motor fuel with an estimated cost of over \$29 billion and traveled 318 billion miles -- a 15 percent increase since 1990. If current growth trends continue, gasoline use and related CO2 emissions in the state would increase approximately 40 percent over the next 20 years. Efforts to maintain a clean and efficient transportation will have significant environmental, economic, and strategic security benefits.

Challenges

Let me first make several observations before outlining some of our efforts to deal with these challenges.

As a transportation agency our primary mission is to improve mobility across California --moving people, goods services, and information. However, our policy is to achieve these objectives in a balanced, integrated way that promotes sustainability.

This is a challenging task because we are in part constrained by factors outside of realm of transportation or issues that are inherently dialectic. Dependency of transportation system on petroleum, for example, is not a transportation issue per se, it's an underlying technology issue. This is also an area primarily guided by the policy and regulatory framework of the federal energy and environmental agencies and the California Air Resources Board and the Energy Commission.

There are also external factors related to consumer behavior such as increased popularity of sport utility vehicles and other light duty trucks that continue to impact fuel economy improvements on fleet efficiency and energy efficiency advances.

While transportation funding has increased during the last several years, the level of state, local, and federal funds for transportation falls substantially short of what is needed to ensure mobility and transportation services. Much of the shortfall can be attributed to eroding transportation revenues compared to vehicle miles traveled.

Transportation planning, programming, project development, maintenance and operations decisions in California are shared among multiple public and private entities. The process is further regulated by federal and state statutes, federal and state environmental protection agencies, and influenced by organized interest groups and political and public interest. It is also noteworthy that 75% of transportation funds for new capital projects

are controlled by the State's regional transportation agencies and 25% by the Department, requiring increasing coordination and collaboration to maximize resources and system improvement project effectiveness.

There is also tension between some of our strategic objectives such as mobility and sustainability. Although improved mobility provides great benefits it does have consequences. For example increased mobility could mean increased VMT and increase in level of energy consumption and greenhouse gas emissions.

Nevertheless, the Department is committed to finding solutions that balance transportation investments with environmental and community values.

Policies, Strategies and Actions for the Future

California Transportation Plan 2025

Caltrans is developing the California Transportation Plan 2025 (CTP), the state's long-range transportation plan that will guide transportation decisions and investment in the 21st Century. It proposes a vision for transportation in year 2025 and beyond, and sets goals, policies, and strategic objectives to achieve a balanced transportation system that promotes sustainability.

The plan's vision statement:

California has a safe, sustainable transportation system that is environmentally sound, socially equitable, economically viable and developed through collaboration; it provides for the mobility and accessibility of people, goods, services and information through an integrated, multimodal network.

The plan defines sustainability as meeting the needs of the present without compromising the ability of future generations to meet their needs. When applied to transportation, it means ensuring that environmental, social and economic considerations are factored into decisions affecting transportation activity.

The CTP sets interdependent goals based on consultation with numerous public and private transportation providers and the public over the past 2 years:

- Enhance Public Safety and Security
- Preserve the Transportation System
- Improve Mobility and Accessibility
- Support the Economy
- Enhance the Environment, and
- Reflect Community Values.

The CTP proposes 13 policies to preserve the transportation system and provide mobility for State's growing population while enhancing the environment, economy, and social

equity of California and offers a number of implementing strategies to realize goals and policies. Many of these policies and strategies are non-traditional, supporting viable transportation choices such as rail, transit, bicycle, and pedestrian; conserve natural resources; manage growth and promote community values; and also commitment to a clean and energy efficient system.

The CTP notes that California's transportation sector consumes 50% of all energy used in California and accounts for nearly 60 percent of all greenhouse gas emissions produced from fossil fuels. It acknowledges future likely declines in petroleum production, and increasing demand for transportation fuel despite increasing vehicle fuel efficiencies. Clearly this is problem that will affect mobility if not addressed.

The CTP is now in final draft. It has been developed in collaboration with state and local agencies (including the Energy Commission), transportation users and private decision-makers.

State Actions and Programs—Walking the Talk

At a recent meeting convened by the Transportation Research Board of the National Academy of Sciences, many attendees believed that a transition to alternative fuels, such as fuel cells, over the next 20 years would not be consumer driven. Rather, such a transition would be undertaken for societal reasons and would require public sector action to accelerate technology adoption.

That public sector role can entail both policies and actions, and California is taking a lead under the guidance of Governor Davis and the leadership of Caltrans Director Jeff Morales.

Traffic Congestion Relief Program

In July 2000, Governor Davis signed the historic Traffic Congestion Relief Program, which allocated over \$5 billion for a variety of transportation projects. Significantly, \$2.6 billion of the TCRP was targeted for transit projects, which included funds for low emissions buses, such as \$40 million for the San Francisco Bay Area to purchase low emission buses to establish express bus services.

Caltrans Policy Directives

Caltrans is energy conscious and has made energy efficiency and conservation its policy and integrated part of transportation planning and project development.

Our Director's policy #23 on energy efficiency and conservation (first of its kind in state agencies) requires that energy efficiency and conservation measures be incorporated into state transportation plans, products and services to minimize fuel supplies and energy sources. It also emphasizes energy efficiency in the design, construction, operation and maintenance of its facilities, and promotes clean fuel sources and fleet efficiency.

Caltrans' Deputy Directive on Accommodating Non-Motorized Travel states that "the Department fully considers the needs of non-motorized travelers (including pedestrians, bicyclists and persons with disabilities) in all programming, planning, maintenance, construction, operations and project development activities and products". This not only promotes these modes directly, but also recognizes that walkable and bikeable communities are also more transit-oriented communities.

Our Director's Policy on Context Sensitive Solutions emphasizes innovative and inclusive approach approaches that integrate and balance community values with transportation safety, maintenance and performance goals.

Planning

On the planning side, the transportation energy program, lead by Dr. Reza Navai, is responsible for developing the department's overall energy policies, implementing energy strategies and guidelines for state and regional planning, and coordinating with external agencies on cross-agency policy framework to provide support for clean transportation and state's effort on climate change-for example we work with the Joint Agency Climate Team which was initiated by Commissioner Boyd and now is in good hands of Greg Greenwood. As part of this effort in coordination with the Energy Commission and the ARB we produced the clean transportation initiative which provides a road map to a coordinated effort for cleaner transportation

We have funded and supported the development and demonstration of the Energy Commission's PLACES-- land use, energy and economic model--since its inception. Our joint application to FHWA further secured \$200,000 from the 99-00 federal Transportation and Community System Preservation (TCSP) grant program for PLACES project.

Other projects include Merced Partnership in Planning, where we are working with USEPA, USDOT and local government to test a GIS based growth, development and transportation infrastructure scenario analysis tool.

These efforts are aimed at reducing unnecessary or inefficient travel. We also are addressing the efficiency of the transportation system itself.

System Energy Conservation-Modeling the Way

In fiscal year 2002/2003 Caltrans has surpassed energy efficiency goals set by Governor Davis by saving \$7.5 million, primarily due to the Statewide Light Emitting Diode (LED) Traffic Signal upgrade project. This achievement has lead to significant emissions reductions in energy generation, and is being expanded through implementation of non-vehicular energy conservation activities, such as reducing the energy to traffic signals, roadway and sign lighting, facility operations and procedures, and bridge and tunnel operations.

Caltrans' Greening the Fleet Initiative uses viable, emerging technologies to reduce mobile source emissions. So far, eighty hybrids and 1057 -gas/propane bi-fuel trucks have been purchased. Low emissions trucks have replaced fifty-four diesel-powered trucks, and zero emission static inverters have replaced generators on thirty-four trucks. 132 diesel-fueling sites targeted for modification to accommodate ultra-low sulfur diesel for improved air quality. Solar panels have replaced fossil fuel powered accessories. These efforts will continue with the goal of making significant emissions reductions and leading California fleet operators.

The Department has a number of programs that emphasize alternative modes and approaches to improve transportation efficiency and productivity. The Community Based Transportation Planning focuses on better coordination and integration of land use activities and decisions with transportation planning and investments. This along with the Environmental Justice program promote livable communities and transportation equity, including implementation of a community grant program that advances community participation and interest. Local projects with energy efficiency, alternative fuels and vehicles scope of work qualify for these grants.

Strategic Goals

The Department has 5 strategic goals to support its mission "Caltrans Improves Mobility Across California". Three of those goals directly improve the efficiency of the transportation system:

- Reliability-Reduce traveler delays
- Flexibility-make transit a more practical travel option
- Productivity-improve the efficiency of the transportation system

Transit and rail use, fueled by significant infrastructure and service improvements over the past decade has been soaring in California. California's intercity rail service managed through Caltrans now boasts the most heavily traveled rail corridors outside the Northeast Corridor. Commuter rail service has taken off in Los Angeles, San Diego and the Central Valley. Our unspoken goal is tripling transit trips by 2025—ambitious given that Caltrans operates no bus transit, and no commuter rail services.

Our Transportation System Management, Intelligent Transportation System (ITS), Car Sharing and traffic management programs seek to maximize traffic efficiency and highway operations and reduce energy consumption and emissions by minimizing travel demand and congestion while increasing transit ridership and vehicle occupancy and improving travel behavior.

A Few Bumps in the Road

Efficiency, Alternatives and Funding

The times are changing. The new generation of vehicles that are either hybrid or powered by hydrogen fuel cells are becoming part of the future transportation scenarios.

California must begin transitioning from petroleum as its predominant source of transportation energy to an environmentally and economically sustainable source.

Congestion in transportation system is worsening as demand outstrips the ability to provide additional capacity. The physical capacity of the system is growing more slowly than in the past for a variety of reasons, including cost, community resistance, and environmental and environmental justice concerns. We are looking to improved methods to manage and operate the system to increase throughput and system efficiency.

For the foreseeable future, the most future mobility demand will be met by basically the system we see today of air travel, freight and passenger rail, and buses, cars and trucks using our interstate and state highways and local roads.

As mentioned before, the primary source of transportation funds supporting this system is the fuel tax. The dilemma is that both the transportation system and its financing system are petroleum based and therefore interrelated. Increased system efficiency and fleet fuel efficiency and reduced VMT could mean lower transportation revenues. This is further exacerbated by penetration of alternative fuel and hybrid vehicles. At the same time, system expansion to accommodate California's growth requires more resources for maintenance and rehabilitation. Promotion and marketing of alternative fuels must be accompanied by consideration of alternative sources of transportation system maintenance and improvement funding.

Institutional Inertia

Initiatives such as fleet greening don't always fit into the typical analytical frameworks used for government decision-making. It isn't easy to promote a leadership role using typical cost-benefit analyses since avoidance of future regulatory conflicts and the "bully pulpit" role of government to affect change, are intangibles benefits not easily quantified.

Diffused Responsibilities and Authorities

Transportation is a complex system, so is transportation policy and decision-making. Transportation must be viewed, planned, and operated as an integrated system with complementary modes and appearing seamless across jurisdictional boundaries. This requires collaboration, coordination, and effective communication amongst users, the private sector, and local, regional, state, and federal agencies.

Unintended Consequences

Transportation must be viewed as a system, one that touches all parts of our lives. Solutions to energy problems associated with the way the system currently operates must take this into account. We have seen examples where a solution to one problem generates other, potentially more serious problems. A systems, not stovepipe or myopic, approach is needed to reducing transportation system energy supply and security

vulnerabilities, and greenhouse gas emissions, AND ensuring continued productive mobility.

Conclusion

So what is different from 20 years ago?

I think we have a clearer vision of California's total transportation needs as we move forward into the 21st Century. We have a better sense of how transportation fits into the California's social, economic and environmental well-being. We have clearer policy direction and closer working relationships between key state agencies. We are addressing issues more from a systems approach. We are seeing real changes in the public's attitude towards issues like transit and "smart-growth". And we know we have a long ways to go to developing and implementing a truly sustainable transportation system, one part of which is the energy that drives it.

In conclusion, we look forward to a continued close working relation with the Commission and staff in fulfilling our mutual responsibilities in providing Californians the transportation system they need and desire while improving security and the environment.